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Agriculture.

Advantages of cooperative credit. By W. I. Myers. 1935. 20p. U.S. Farm Credit Administration. Address at the Annual Agricultural Conference, Purdue University, January 15, 1935.

Agricultural adjustment, present and future. By Chester C. Davis. 1935. 14p. Multigraphed. U.S. Department of Agriculture. Speech before Illinois Agricultural Association, January 30, 1935.

Cooperative credit for farmers. By Albert S. Goss. 1935. 16p. U.S. Farm Credit Administration. Address before the National Grange, November 1934.

Federal land bank loans and land bank commissioner's loans: How and where to apply. Revised 1935. 14p. Farm Credit Administration. Circular no. 1.

Financing agriculture cooperatively. By W. I. Myers. 1934. 16p. U.S. Farm Credit Administration. Address before the American Farm Bureau Federation, December 1934.

Financing agriculture in 1934. 1935. 24p. U.S. Farm Credit Administration.

Selected references on the history of English agriculture. Everett E. Edwards. 1935. 42p. U.S. Department of Agriculture. Library. Bibliographical contributions, no. 24.

Why and the whither of the AAA. By John R. Hutcheson. 1934. 24p. Virginia Polytechnic Institute. Extension division. Bulletin no. 135.

Air Conditioning.

Additional specifications of air conditioners with refrigeration. Electric Refrigeration News. v.15, no.1. May 1, 1935. p.12.

Air conditioning maintains quality of fruits and vegetables. By Clarence E. Baker. Heating, Piping and Air Conditioning. v.7, no.8. August 1935. p.369-372. How air conditioning is applied to maintain quality of fruits and vegetables is described and results of recent research are surveyed. Various methods of precooling, cooling in transit, and treatment with carbon dioxide and other gases are among subject discussed.

Drier air for summer comfort. By V. L. Sherman. American Builder. v.57, no.8. August 1935. p.34-36. New mechanical equipment for home can solve problem of summer air conditioning.

Air Conditioning. (Cont'd)

Specifications of air-conditioning units. Electric Refrigeration News. v. 15, no.4. May 22, 1935. p. 18, 20, 22, 24, 26, 28.

Alcohol.

Fuel alcohol from artichokes. Southern Farmer. v.96, no.3. August 1935. p.2. Can be produced at cost of 7 to 10 cents a gallon. Value for other purposes is almost nil and can be made to produce heavy tonnage even on semi-arid lands.

Italy plans extensive use of sugar beet alcohol as motor fuel. Western Irrigation. v. 17, no. 10. July 1935. p. 4. Production would be increased to one million hectoliters within four years and proposes that it shall be made obligatory for producers and importers of motor fuels to use sufficient alcohol mixed with gasoline to absorb increased production. Proportion of alcohol required would be fixed by law.

Associations.

Civil engineers' meeting covers western problems - II. Engineering News Record. v. 115, no.3. July 18, 1935. p. 84-85. Second half of program of Los Angeles convention includes papers on flume design, aqueduct construction and state and municipal services.

Belts.

Flat belts on short centers. Power. v.79, no. 7. July 1935. p.366-367. How to apply them and how to get long service from applications.

Breakwaters.

Concrete blocks replace stone in jetties battered by sea. By Geo. F. Whittemore and Lt. Col. H.F. Finch. Engineering News Record. v.115, no.6. August 8, 1935. p.192-194. Precast concrete blocks and concrete coping adopted as latest resort to stabilize rockfill subjected to seas that quickly dislodge smaller than 20-ton rock in Humboldt Harbor entrance jetties in California.

Designing breakwater foundations against wave scour. Engineering News Record. v. 115, no.4. July 25, 1935. p. 123-124. Better fortification of rubble mound bases against wave action indicated by failure of Algiers breakwater. New structures at Haifa and Dunkirk show trend toward strong encasement of light stone fills.

Building Construction.

Double duty dormers. By Kenneth Edmunds. Better Homes and Gardens. v.13, no.7. March, 1935. p.26-27, 62-63.

Enclosed porch adds to your home. By R.O. Buck. Popular Mechanics. v.64, no.1. July 1935. p.121-125.

Building Construction. (Cont'd)

Lumber grade-use guide for softwood and hardwood lumber in building and general construction. 1935. National Lumber Manufacturers Association, Washington, D.C.

New method of R B M construction uses new type grooved brick. Brick and Clay Record. v.87, no.1. July 1935. p.16-17. S.O.S. system of brick wall construction claims high factor of safety in storm, cyclone or earth disturbances. Reinforced vertically as well as horizontally with standard reinforcing steel, brick is grooved through center of both faces with two intersecting grooves about 2 inches from each end. Where these grooves intersect middle groove holes run through brick for placement of steel rods.

Random observations on setting. Part III. By L.R. Whitaker. Brick and Clay Record. v.87, no.1. July 1935. p.18-19.

Relative cost of material and labor in P.W.A. building construction. By Herman B. Byer. American Builder. v.57, no.8. August 1935. p.58.

Sand-lime bricks. By G.E. Bessey. London, 1934. 62p. Great Britain. Department of scientific and industrial research. Building research. Special report no.21.

Wood structural design data. vol. 1. 1934 preliminary printing. 296p. National lumber manufacturers association, Washington, D.C.

Concrete.

Moisture in concrete sand measured by electric current. By Chas. E. Wuerpel. Engineering News Record. v.115, no.2. July 11, 1935. p.52-54. Experiments and trial installations at Alton lock and dam show accuracy within three-tenths of one per cent in determining moisture by electrical conductivity of sand.

Physical properties of speed. Portland and blended cement mortars and concretes. By R.E. Mills and R.B. Crepps. 1934. 60p. Purdue University. Engineering experiment station. Research series no.47. Report of investigation conducted in cooperation with Louisville Cement Company.

Conservation.

Conservation redefined. By Rexford G. Tugwell. 1935. 10p. Multigraphed. U.S. Department of Agriculture. Address before the Fiftieth anniversary of the Founding of New York's Forest Preserve, May 15, 1935.

Cornstalks.

Separation of cornstalks into long fibers, pith, and fines. By E.R. Whittomere, C.B. Overman, and Baker Wingfield. 1935. 8p. National bureau of standards. Miscellaneous publication M 148. Results of investigations on agricultural wastes as source of papermaking fibres.

Corrosion.

Corrosion of steel. By Thomas J. Finnegan, Richard C. Corey and David D. Jacobus. Industrial and Engineering Chemistry. v.27, no.7. July 1935. p.774-780. Quantitative effect of dissolved oxygen and carbon dioxide.

Influence of protective layers on the life of metals. By Frank N. Speller. Mechanical Engineering. v.57, no.6. June 1935. p.355-360.

Modern methods of checkmating corrosion. By Dr. R.E. Hall. Power Plant Engineering. v.39, no.8. August 1935. p.444-447. Only general case of metal in contact with water is considered.

Cotton and Cotton Ginning.

Effects of certain soil types, seasonal conditions, and fertilizer treatments on length and strength of cotton fiber. By O.A. Pope. 1935. 98p. Arkansas. Agricultural experiment station. Bulletin no.319.

Dams.

Grand Coulee project and dam. By Kenneth B. Keener. Engineering News Record. v.115, no.5. August 1, 1935. p.141-143. Review of conditions that led to radical change of plans with details and quantities of final structures.

Soil technology in earth dam construction as employed in Back Creek dam. By C.A. Hogentogler, jr. Part 2. Public Works. v.66, no.6. June 1935. p.15-18. Soils most suitable for dam construction have optimum moisture contents just slightly above plastic limit and difference between plastic limit and optimum moisture content may serve as basis for selection of fill soils, although more work must be done along this line before any specifications could be set up.

Some experiments on laminated dam models. By John Hedber. Civil Engineering. v.5, no.7. July, 1935. p.413- Study of effect of dividing arched dams into thin shells.

Unique devices developed to aid dam foundation grouting. Engineering News Record. v.115, no.6. August 8, 1935. p.191. T.V.A. engineers perfect a "feeler" to determine location depth and thickness of seams beneath dam site, and "flusher" to wash and clean openings before grouting.

Dynamometers.

Drawbar dynamometer and its use in soil tillage experiments. By G. Wallace Giles. 1935. 19p. Missouri. Agricultural experiment station. Research bulletin no.226.

Electric Rates.

T V A electricity rates - statement of facts. 1935. 8p. Tennessee Valley Authority, Knoxville, Tenn,

Electric Service, Rural

New rural underground cable. By F.L. Aime. Electrical World. v.105, no.15. July 20, 1935. p.34-36. Consumers power uses 2,400-volt, paper-insulated, copper-sheathed cable to serve 23 rural customers.

Report on cost of distribution of electricity. November 10, 1934. Power authority of the State of New York. Albany, 1934. 300p.

Electricity on the Farm.

Electricity for farm homes. Southern Planter. v.96, no.4. April 1935. p.5.

Home-made electric hay hoists. By Harry L. Garver. 1935. 4p. Washington state college. Extension service. Extension bulletin no. 206.

Morris Cooke talks rural electrification. Progressive Farmer. v.50, no.7. July 1935. p.5.

New deal proposed in rural electrification. By Leonard Church. Electrical World. v.105, no.14. July 6, 1935. p.29-31. Rural electrification administration plans intensive promotional effort. With low load-building rates and liberal long-term customer financing for wiring and equipment. Interview with Morris Llewellyn Cooke.

Review of the progress of electrification in modern English farm practice. By H.J. Denham. Journal of the Ministry of Agriculture. v.42, no.3. June 1935. p.221-230.

Erosion Control.

Beginning to end a yearly \$5,000,000 waste. By Ellis Irving Cronk. New Jersey Farm and Garden. v.6, no.5. May 1935. p.7, 18.

Contour farming favored. Washington Farmer. v.60, no.14. July 11, 1935. p.9. Fits into erosion control better than fence-row method.

Erosion and the citrus grower. By Harry E. Reddick. California Citrograph. v.20, no.8. June 1935. p.235, 258-259. Soil erosion as menace to agriculture in California, is second only to indifference of people whose handling of land most certainly will decide future of this state from agricultural viewpoint.

Lost: Millions of dollars. Extension Service Review. v.6, no.6. June 1935. p.68, 80. Damage amounts to millions of dollars each year and careful surveys indicate that many farms have lost from their entire area average of 8 inches of soil in last 30 to 50 years.

Erosion Control. (Cont'd)

Protecting the soil, civilization's greatest heritage. By H.E. Klinefelter. Missouri Farmer. v.27, no.14. July 15, 1935. p.3, 7.

Farm Buildings and Equipment.

How to build a wind-proof Gothic barn. By A.W. Holt. American Builder. v.57, no.8. August 1935. p.46-49, 71. Gives construction details.

Rural community building plans. By Deane G. Carter. 1935. 30p. Arkansas. Agricultural experiment station. Bulletin no.322.

Farm Machinery and Equipment.

Better plows - better farming. By E.T. Leavitt. Implement and Tractor. v.50, no.15. July 27, 1935. p.10. Improved products of industry permit farmers to put new efficiency into old, yet most fundamental and power-using agricultural operation.

Bibliography on development of farm machinery. Compiled by Lillian Church. 1935. 8p. mimeographed. U.S. Bureau of Agricultural Engineering. Information Series no.14.

Design and development of a farm implement. By Theo. Brown. Farm Implement News. v.56, no.16. August 1, 1935. p.16-19. Story of spreader with beater on axle.

Fitting farm tools. By Louis M. Rochl. N.Y., Bruce Publishing Company. 1934. 102p.

Furrow dam every 10 feet. By G. R. Howard. Kansas Farmer. v.73, no.11. May 25, 1935. p.6. Dam-forming attachment for lister plows has been invented by Harry W. Wetzel, Bellefont. Consists of angle-iron frame about 6 1/2 feet long, front end being connected to lister directly behind beam. Rear end of frame is provided with 24-inch disk. About midway on frame are two eccentric wheels, so designed to make tractive contact with ground in all positions of wheels. These wheels are adjustable along frame so as to obtain greater or lesser lifting action upon scraper disk. As frame is drawn forward, wheels rotate. As highly eccentric portions of wheels engage with ground, frame will be lifted allowing scraper disk to pass over or dump soil it has gathered, thus forming well-shaped dam across furrow. These attachments work independently, one in back of each lister-bottom.

Hay presses in a "come back". Implement and Tractor. v.50, no.15. July 27, 1935. p.8-9. Increased demand for roughage, including straw, stimulates revival for both stationary and pick-up types of balers.

How machinery creates employment. By R.U. Blasingame. Agricultural Leaders' Digest. v.16, no.5. July 1935. p.11-12.

Life of harvesting machinery. By Earl G. Welch. Southern Agriculturist. v.65, no.6. June 1935. p.6. Increasing life of farm machines, and especially of harvesting machines, is one of simplest ways of decreasing cost.

Farm Machinery & Equipment. (Cont'd)

New aid to clean plowing. By U.S. Bureau of Agricultural Engineering. Farm Implement News. v.56, no.16. August 1, 1935. p.15. Self-angling disc jointer plow attachment was designed for better coverage of trash in plowing. Tests show this attachment also reduces draft of plows by 10 to 15 per cent compared with draft of plows equipped with regular rolling coulters and jointers, which would make possible reduction of about \$7,000,000 in annual cost of plowing in North Central States alone. Attachment has concave disc which cuts and aids in turning under edge of furrow slice nearest unplowed land just ahead of moldboard of plow. Disc is mounted so that it is free to move about vertical standard to which it is attached but always assumes position practically parallel to plow travel. When disc strikes root, stone or other solid object, attachment will not be damaged, because shank and arm permit disc to swing to side and upward to clear obstruction, after which it returns to its normal position.

Fences.

Good farm fences. By L.W. Neubauer. Farmer. v.53, no.11. May 25, 1935. p.12.

Fertilizer Application.

Distributing commercial fertilizer. By H.P. Cooper. Southern Agriculturist. v.65, no. 4. April, 1935. p.32.

Lining western Oregon soils. By R.E. Stephenson and W.L. Powers. 1934. 19p. Oregon Agricultural experiment station. Bulletin no.325.

Proceedings of the tenth annual meeting of the Joint Committee on Fertilizer Application, held at Washington, D.C. November 21, 1934. 1935. 118p. National Fertilizer Association, Washington, D.C.

Fills.

Stabilizing a slipping fill on a hillside road. By Wallace B. Kane. Engineering News Record. v.115, no.6. August 8, 1935. p. 184-185. Setting grade farther into hill, utilizing downhill slope wall toed into rock and installing pipe drains. Check Missouri road slide.

Flood Control.

Army engineers plan surveys of N.Y. streams. Engineering News Record. v.115, no.4. July 25, 1935. p.132, 134. Effort to avert further destruction in recently flooded areas of New York and Pennsylvania.

Heavy rains in western New York state cause worst flood in seventy years. Engineering News Record. v.115, no.2. July 11, 1935. p.65-66. Damage estimated at \$10,000,000.

Flood Control. (Cont'd)

Measuring Ohio's rivers. By C.V. Youngquist. Engineering Experiment Station News. Ohio State University. v.7, no.3. June 1935. p.23-24. Part VI. Flood hydrographs of typical Ohio streams.

Relief works funds allotted for Los Angeles flood control. Engineering News Record. v.115, no.5. August 1, 1935. p.169.

Flow of Water and Gases.

Diffusion problems. By Walter W. Soroka. Refrigerating Engineering. v.29, no.6. June 1935. p.310-314. Takes up in general mathematical-physical way, question of "diffusion". Mathematical basis of diffusion problems is given with brief touch upon vector analysis. "Methode forte" for fluid flow, heat flow and other flow problems.

Frost Protection.

Control of summer frosts on peat lands. By O.W. Howe. 1935. 1p. University of Minnesota. Agricultural extension division. Agricultural engineering news letter no.40.

Garages.

What's new in garage designs and door rigs. American Builder. v.57, no.8. August 1935. p.40-41.

Hay.

"When" and "how" in haymaking. By R.D. Lewis and C.J. Willard. 1935. 8p. Ohio State University. Agricultural college. Extension service. Bulletin no.160.

Heating.

How to reduce next winter's heating costs. By J. Earl Seiter. Heating, Piping and Air Conditioning. v.7, no.8. August 1935. p.378-379.

Oil burning in residences. By D.W. Nelson. Heating, Piping and Air Conditioning. v.7, no.7. July 1935. p.343-351.

Hotbeds.

What can't you raise with an electric hotbed? Better Homes and Gardens. v.13, no.7. March 1935. p.28, 82-83.

Houses.

G-E backs plan to build model homes. Electric Refrigeration News. v.14, no. 17. April 24, 1935. p. 1-2. General plan is to offer selected builders new ideas, prize-winning drawings, substantial discounts and terms on electrical equipment, and national advertising

Houses. (Cont'd)

and support, all in consideration of construction by these builders of demonstration style houses.

Housing program seeks more modern rural homes. By Walter G. Ward. Extension Service Review. v.6, no.5. May 1935. p.50.

Looking over a few designs. By Frank Chouteau Brown. Pencil Points. v. 16, no.5. May 1935. p.237-252. Submitted in recent G.E. competition, Class A-B.

National homes conference held at Purdue University. Aerologist v.11, no.7. July 1935. p.24-25. Under auspices of Purdue Research Foundation. Homes will provide living laboratory for study of better living conditions for average family, which represents large consuming group for new homes. Homes which will be built by Foundation for persons in \$2,000 to \$2,400 salary group, will be used for complete studies of heating, ventilating, lighting, air conditioning, insulating, and other essentials of home. Also, thorough study will be made of materials to be used in house construction and various kinds of material now on market will be thoroughly tried out.

Opportunity in pre-fabricated houses. Domestic Commerce. v.16, no.1. July 10, 1935. p.333. Believes that within next three to five years, someone will have on market house which is twice as good as existing construction methods produce at sale price under \$2,500.

Prefabricated houses bid for new attention. Engineering News Record. v. 115, no.2. July 11, 1935. p.42-44. Emphasis is being placed on mechanical accessories as well as on factory-produced frames, walls and floors. Plywood brings timber into picture.

Tourists' cabins that get the business. Popular Mechanics. v.64, no.1. July 1935. p.151-153.

Virginia revives a tradition. Extension Service Review. v.6, no.5. May 1935. p.49, 62. Housing survey gives basis for program to maintain or restore beautiful homes.

Insect Control.

Mosquito problem in Indiana. By J.J. Davis. 1935. 8p. Purdue university. Extension bulletin no.207.

Irrigation.

Administration report of the Irrigation branch for the year ending the 31st March 1934. Nagpur, 1935. 153p. India Central provinces and Berar. Public Works department.

Farm irrigation pumping systems. By L. J. Smith and Harry L. Garver. 1935. 24p. Washington. Agricultural experiment station. Bulletin no.311.

Irrigation. (Cont'd)

More irrigation. Arizona. Producer. v.14, no.8. July 1, 1935.
p. 13. Showlow-silver Creek project to bring 4,000 new acres under
water.

Pasture irrigation. By L.J. Smith, and others. 1935. 28p. Washing-
ton. Agricultural experiment station. Bulletin no.313.

Using porous hose in high row crops. By O.E. Robey. Quarterly bulletin.
Michigan. Agricultural experiment station. v.17, no.4. May 1935.
p.225-228. Objections have frequently been made to use of porous hose
method of applying water for irrigation purposes to high row crops,
because of difficulty in moving hose from row to row. Experiments were
conducted by author to work out some method of adapting porous hose ir-
rigation to crops of this kind. As result of these experiments, device
described was developed.

Land.

Land settlement technique abroad. I. Organization of activities in
England, Germany, and Italy. By Erich Kraemer. 1935. 40p. Mimeo-
graphed. U.S. Resettlement Administration Land policy circular
supplement.

Land use program for the cotton belt. By H.R. Tolley. 1935. 19p.
Mineographed. U.S. Department of Agriculture. Address before the
Association of Southern Agricultural Workers, February 1, 1935.

Light.

Recent advances in the use of light for plant growth. By L.C. Porter.
General Electric Review. v.38, no.6. June 1935. p.268-271.

Miscellaneous.

Chief cause of this and other depressions. By Leonard P. Ayres. 1935.
52p. Cleveland Trust Company. Cleveland, Ohio.

Confusion, choice and unified action. By Henry A. Wallace. 1935.
U.S. Department of Agriculture. 8p. Mimeographed. Remarks
at Harvard University, June 20, 1935.

Engineer's English. By John C. French. Mechanical Engineering. v.57,
no.6. June 1935. p.364-366.

Forty-first report of the Agricultural experiment station. University of
Minnesota. July 1, 1932 to June 30, 1934. 1935. 133p. Agricultural
Engineering projects, p.94-96.

National significance of recent trends in farm population. By R.G.
Tugwell. 1935. 12 p. Mimeographed. U.S. Department of Agriculture.
Address before the American Cotton Shippers' Association, April 26, 1935.

Miscellaneous.

National significance of recent trends in farm population. By R.G. Tugwell. 1935. 12p. mimeographed. U.S. Department of Agriculture. Address before the American Cotton Shippers' Association, April 26, 1935.

Need for unifying purpose. By Henry A. Wallace. 1935. 21p. Mimeographed. U.S. Department of Agriculture. Address at the annual meeting of the Foreign Policy Association, March 16, 1935.

Neglected elements of recovery. By Ralph E. Flanders. Mechanical Engineering. v.57, no.6. June 1935. p.345-348. Inquiry into relation between agriculture and industry, prices and wages, governmental expenditure and income, and recovery and reform.

Models.

Large model aids study of Bonneville project. By Henry W. Young. Engineering News Record. v. 115, no.6. August 8, 1935. p. 195-196. Hydraulic features of Columbia River above and below Bonneville Dam site duplicated. Predetermination of river action governed design of important dam features.

Paints and Painting.

Behavior of house paints on different woods. By F.L. Browne. 1934. 25p. Mimeographed. U.S. Forest Products Laboratory, Madison, Wisconsin.

Tests endorse aluminum priming. By Robert I Wray and Junius D. Edwards. American Builder. v.57, no.8. August 1935. p.54, 56. Study of priming paints on different species of lumber.

Pipes and Piping.

Investigation of stresses in prestressed reinforced concrete pipes. By Ray B. Crepps. 1934. 74p. Purdue University. Engineering experiment station. Research bulletin no.46. Report of investigation conducted in cooperation with Lewistown Pipe Company.

Plumbing.

Master plumbing for American farms. By Morris L. Cooke. 1935. 14p. Mimeographed. Rural electrification administration. Press section. Release no. 17. Speech before fifty-third annual convention of national association of master plumbers, Chicago, Illinois.

Poultry Houses and Equipment.

Yarding systems and crop rotations for poultry farms. By Howard B. Sprague. 1935. 12p. New Jersey. Agricultural experiment station. Circular no.357.

Power.

Power on West Virginia farms. By F.D. Cornell, jr. 1935. 44p.
West Virginia. Agricultural Experiment Station. Bulletin no.267.

Power Projects.

Power developments on the Little Tennessee. By J. P. Growdon. Civil Engineering. v.5, no.7. July, 1935. p.401-405. Various types of arched dams designed to meet local conditions.

Public Works.

Important projects authorized by allotment board. Engineering News Record. v.115, no.4. July 25, 1935. p.133. Total of work authorized by recommendation is about \$80,000,000.

Suggestive list of references on the Federal emergency administration of public works and its work including certain references pertaining to the Public works housing division. Compiled by James T. Ruboy. 1935. 28p. Mimeographed. U.S. Geological Survey library. Bibliographical list no.2.

Rain and Rainfall.

Frequency of intense rainfall in Iowa analyzed. Engineering News Record. v.115, no.6. August 8, 1935. p.190-191. Presents summary of analysis of intense rainfall experience at stations in Iowa for periods ranging from 5 min. to six days. Shows empirical relationship between intense monthly rainfall and intense one-day rainfall of same average frequency and outlines method of correlating rainfall and runoff data, which has been suggested by comparisons of monthly and one-day rainfall of given frequency.

Heavy rainfall and floodflows in New York area. Engineering News Record. v.115, no.5. August 1, 1935. p.161-162. Unusually heavy precipitation, most of which occurred in one 24-hour period, resulted in many record-breaking stream discharges.

Reclamation.

Reclamation plans coordinated with land use policy. Engineering News Record. v.115, no.5. August 1, 1935. p.167, 170.

Refrigeration.

Ice cooling cabinet. By Hollis Shomo. Southern Planter. v.96, no.4. April 1935. p.27-28. Gives diagram.

Freon as a refrigerant for existing systems. By R.J. Thompson. Power Plant Engineering. v.39, no.8. August 1935. p.464-465. Lubrication requirements, detecting leaks. Handling and safety precautions.

Handy pre-cooling device. By C.L. Guinness. New England Homestead. v.108, no.11. May 25, 1935. p.9. Simple, homemade equipment that lessens the load on the milk refrigeration unit.

Refrigeration. (Cont'd)

Household refrigerator specifications. Electric Refrigeration News. v.15, no.7. June 12, 1935. p.10, 12, 14-15, 17, 19.

How to produce good cream. By V.C. Manhart. 1935. 4p. Purdue University. Department of agricultural extension. Leaflet no.191.

Methods of refrigeration in transportation of lemons. By C.W. Mann and W.C. Cooper. California Citrograph. v.20, no.8. June 1935. p.236-237.

Milk cooling. Electric Refrigeration News. v.15, no.2. May 8, 1935. p.12-15. Cost of cooling milk by ice and mechanical refrigeration studied on 44 farms, by U.S. Department of Agriculture.

Precooling investigations with deciduous fruits. By F.W. Allen and L.R. McKinnon. 1935. 142p. California. Agricultural experiment station. Bulletin no. 590.

Specifications of commercial machines compiled by Electric Refrigeration News. Electric Refrigeration News. v.14, no.14. April 3, 1935. p.4, 6, 8, 10, 14, 16, 18, 20.

Summarized report of investigations on the transcontinental shipment of apples and pears during winter weather. By D.F. Fisher. 1935. 11p. Mimeographed. U.S. Department of Agriculture.

Research.

Bill provides \$1,000,000 for research in agriculture. Science News Letter. v.28, no.744. July 13, 1935. p.20. Secretary of Agriculture "is authorized and directed to conduct research into laws and principles underlying basic problems of agriculture in its broadest aspects", and also to carry on investigations looking to improvements in handling and marketing, as well as "research relating to conservation, development of land and water resources for agricultural purposes."

Research as applied to engineering. By Earle B. Norris. Civil Engineering. v.5, no.7. July 1935. p.408-412. Its importance in industry and economics stressed.

Retaining Walls.

Cheap levees by hydraulic fill at Lake Okeechobee. Engineering News Record. v.115, no.3. July 18, 1935. p.81-84. Hydraulic dredges, with special-type cutters, are handling mixture of sand, marl and blasted rock at strikingly low cost in constructing 66-mile defense against storm-wave inundation.

Shelterbelts.

Planting the standard windbreak. By Parker O. Anderson. 1935. 8p. University of Minnesota. Agricultural extension division. Special bulletin no. 168.

Silos.

Temporary silos. By G.E. Martin. 1935. 8p. Missouri. College of agriculture. Agricultural extension service. Circular no.327.

Soil Moisture.

Infiltration capacity of soils in relation to the control of surface run-off and erosion. By G.W. Musgrave. Journal of the American Society of Agronomy. v.27, no. 5. May 1935. p.336-345. Con-

clusions: It is obviously erroneous to attempt to apply like measures for control of surface runoff and erosion to both permeable and impermeable soils. Amount of erosion occurring from field for rain of given intensity and duration may be approximately predetermined for given set of conditions if quantitative data are available for (a) amount of water impounded upon surface of field by the treatment; (b) rate of infiltration for soil and conditions; and (c) density of runoff (pounds of soil per cubic foot of runoff) for soil and treatment. Amount of water impounded by such treatments as terracing, contouring, etc., is approximately determinable. Methods are shown and specific cases given for measurement of infiltration capacity of field soils. Considerable body of data already exists which gives effects of various treatments of many soil types upon density of runoff. Before erosion control measures are designed and recommended for general application in field, their probable effect should first be calculated and degree of protection which they afford compared with rainfall records of area.

Soils.

Ice-pressure determinations in clay soils. Engineering News Record. v. 115, no.4. July 25, 1935. p.127. Crystallization pressure increases approximately in direct proportion to amount temperature is below freezing. Tests have definitely proved that in true clays having considerable plasticity any amount of ice segregation can be produced provided freezing proceeds at sufficiently slow rate.

Microchemical examination of soil solutions. By the Division of Tests, U.S. Bureau of Public Roads. Reported by James A. Kelley. Public Roads. v. 16, no.5. July 1935. p.77-89.

Soil-bearing test values on proportional areas. By Marvin L. Davis. Engineering News Record. v.115, no.2. July 11, 1935. p.46-47. Small test-loaded areas give data for projecting settlement curve for full footing areas of actual structure.

Soils mechanics education takes step ahead. Engineering News Record. v.115, no.2. July 11, 1935. p.45. Outstanding papers on progress in soils mechanics knowledge and instruction presented at annual meeting of Society for the Promotion of Engineering Education.

Specifications.

Cement, timber, brick and asphalt specifications and tests. Engineering News Record. v.115, no.2. July 11, 1935. p. 55-58. Second half of A.S.T.M. convention program at Detroit records important development in construction materials.

Sprays and Spraying Equipment.

Twelve thousand sprayers. Pennsylvania Farmer. v.112, no.12. June 8, 1935. p.5. Points to remember: (1) High pressure, (2) plenty of material and (3) proper nozzle adjustment.

Steel.

New steel data in special pamphlet as well as in S.A.E. handbook. S.A.E. Journal. v.36, no.4. April 1935. p.18-19.

Stream Flow.

Record stream discharges feature New York flood. Engineering News Record. v.115, no. 3. July 18, 1935. p.91-94. Cloudbursts in localized areas precipitated one-quarter of yearly rainfall in two days and large runoff swelled streams to record stages, causing estimated damage of \$25,000,000.

Surveying.

First-order triangulation in Texas. (1927 datum) By High C. Mitchell. Washington. 1935. 43lp. U.S. Coast and Geodetic Survey. Special publication no. 189.

Tennessee Valley Authority.

TVA is a laboratory. Printers' Ink. v.170, no.3. January 17, 1935. p. 83-84, 87. Four-step program: (1) to provide cheap electricity; (2) to make available to people of area low-priced electrical appliances; (3) to finance easy-term sale of those appliances; and (4) to conduct intensive campaign of consumer education and sales promotion.

Tractors.

Economic relation of tractors to farm organization in the grain farming areas of eastern Washington. By E.T. Landerholm. 1935. 5lp. Washington. Agricultural experiment station. Bulletin no.310.

More tractors on U.S. farms. Implement and Tractor. v.50, no.15. July 27, 1935. p.11. Curve continued upward even during depression to reach total of 1,174,889 in mid-1935, according to recent Farm Equipment Institute survey.

Operating cost and upkeep of garden tractors. Market Growers Journal. v.57, no.2. July 15, 1935. p.292. Part IV. American Society of Agricultural Engineers, garden tractor committee to make more tests this summer

Tractors on farms increase despite depression. Farm Implement News. v.56, no.16. August 1, 1935. p.14. Research department of the Farm Equipment Institute estimates that there were 1,123,251 tractors

Tractors. (Cont'd)

on farms on Jan. 1, 1935, as compared with 920,032 on Apr. 1, 1930, increase of about 22 per cent. It also estimates that this number has been increased to 1,174,889 as of July 1 this year.

U.S. Geological Survey.

List of references on the United States Geological Survey and its work. Compiled by James T. Rubey. 1935. 29p. Mimeographed. U.S. Geological Survey Library. Bibliographical list no.1.

Walls.

Offer pre-fabricated brick wall for low cost construction. Brick and Clay Record. v.87, no.1. July 1935. p.12-13, 17: 4-inch wall, reinforced with steel rods set through cored brick, and built in sections as large as 11 feet square. Involves setting of brick on ground within wooden frames, inserting reinforcing rods through holes in brick, pouring mortar joint. When slab is finished it is delivered and set into foundation by trucks especially designed for purpose. No limitation as to size or design of building as wall measurements may be absorbed by various sizes of wall sections.

Waste Products, Utilization.

Rubbish made into material useful in building. Popular Mechanics. v.64, no.1. July 1935. p.18. Introduced in Germany. Material, which is fireproof, can be used for partitions. Much cheaper to produce than ordinary materials.

Water Softeners.

Soft water all the time. By Arthur P. Hirose. Better Homes and Gardens. v.13, no.7. March 1935. p.20-21. Water-softener is more than comfort and luxury, it's money-saver; here's what it costs and how it works.

Water Supply.

Artificial water catchments. By J.H.O. Eaton. Journal of the Department of Agriculture of South Australia. v.38, no.8. March 15, 1935. p.944-953. Includes that gathered from various sources and is only intended to give such data as may permit interested person to become acquainted with method of construction and possibilities of this form of water supply.

Methods of reducing the flow of artesian wells. By Howard E. Simpson. Revised edition. 1932. 7p. North Dakota Geological Survey. Bulletin no.3.

Survey for artesian water under way in Canada. Engineering News Record. v.115, no.3. July 18, 1935. p.80. Investigations conducted in southern Saskatchewan and southwestern Alberta regarding depth of water table and quality of water to be obtained.

Weather.

How the weather makes you hot and cold. Popular Mechanics. v.64,
no.1. July 1935. p.34-36, 140A.

Weirs.

Venturi and weir measurements. By Charles M. Allen and Leslie J.
Hooper. Mechanical Engineering. v.57, no.6. June 1935. p.369-
374. Forty years of comparative records.

Welding.

Pipe welding - practical field testing and instruction of welders.
By D.O. Ferguson. Heating, Piping and Air Conditioning. v.7, no.7.
July 1935. p.335-337.

